THE CORPUS CHRISTI TORNADOES
OCTOBER 24, 2002

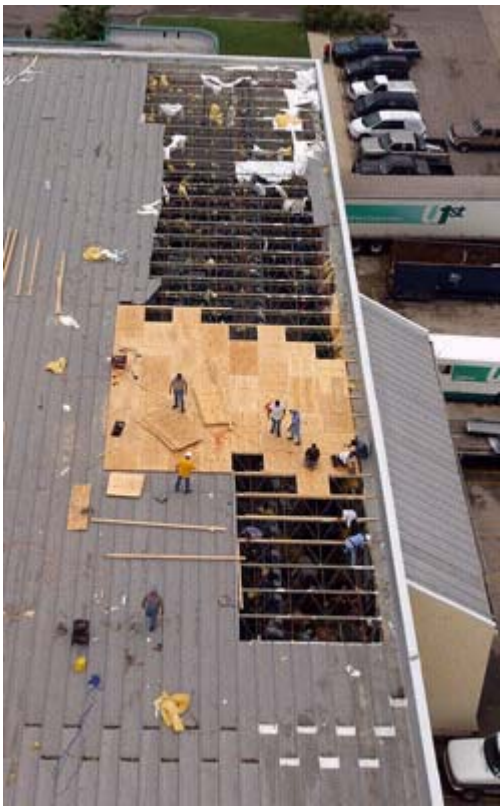
Joseph E. Minor, P.E.
Consulting Engineer
Rockport, Texas
November 15, 2002

Three tornadoes were spawned from one thunderstorm that crossed Corpus Christi, Texas in the early afternoon on Thursday October 24, 2002. According to the Corpus Christi office of the National Weather Service, the first tornado originated at 2:19 pm two miles south of Corpus Christi International Airport and traveled seven miles before dissipating near Old Brownsville Road and South Padre Island Drive nine minutes later. This tornado was classified as F0 and caused no damage. The second tornado formed near Navigation Boulevard and Old Brownsville Road at 2:32 pm and caused damage at Del Mar College West Campus and the adjacent UniFirst Building. One death occurred at Del Mar College West Campus. This tornado was classified as F2 (wind speeds 113-157 mph).

Tornado 2 as it approached Del Mar College West Campus
(Photo By Chuck Tanner/Special to the *Caller-Times*)

Damage caused by Tornado 2 at Del Mar College West Campus
(*Caller-Times* Photo/David Pellerin 10.25.2002)

Damage to brick veneer wall at Del Mar College West Campus caused by Tornado 2
(*Caller-Times* photo/Joey Cruz 10.25.2002)



Roof Damage at the UniFirst Building near the Del Mar College West campus caused by Tornado 2 (*Caller-Times* photo/David Pellerin 10.25.2002)

The third tornado developed at 2:40 pm south of the Driscoll Middle School as the second tornado was dissipating. This tornado, also classified as F2, damaged apartments, metal buildings, the Driscoll Middle School, the HEB Food Store and nearby businesses before moving across refinery row and diminishing in Nueces Bay about 2:50pm. Damages caused by these winds are of interest because the indicated wind speeds are well within the range of hurricane winds that could affect the city at large. The damages are also illustrative of wind effects addressed in building codes and standards (see cited sections/figures in ASCE 7-02):

- High local uplift pressures along eave lines of monoslope roofs (Fig. 6-14A)
- Uplift pressure on metal building main wind force resisting system (Fig. 6-10)
- High local pressures on ridge lines of hip roofs (Fig. 6-11C)
- Overturning forces on roof top mechanical equipment (provisions pending)
- High local pressures at corners of walls (Fig.6-11A)
- Pressures on parapets (6.5.11.5/6.5.12.4.4)
- Uplift pressures on flat roofing system (Fig. 6-11A)

Tornado 3 caused eave-line damage to apartment houses with monoslope roofs
(*Caller-Times* photo/David Pellerin 10.25.2002)

Purlins were removed from bolted connections on the first interior frame (from left) and pulled the second interior frame upward, causing wall with doors to move inward
(Photo by Joseph E. Minor)

Metal sheathing removed from hip roof on Driscoll Middle School
(Photo by Joseph E. Minor)


Mechanical equipment overturned on roof of Driscoll Middle School
(Photo by Joseph E. Minor)

Failure of non-reinforced masonry at corner of walls, Driscoll Middle School
(Photo by Joseph E. Minor)

Failure of leeward parapet (two CMUs high)
(Photo by Joseph E. Minor)

Roofing system failure on HEB Food Store
(*Caller-Times* photo/David Pellerin 10.25.2002)

Acknowledgements

Supporting information was obtained from the *Corpus Christi Caller-Times* web page (*www.caller.com*), including an article by Gonzales (2002) and selected photographs (credits as noted).

References

Minimum Design Loads for Buildings and Other Structures, ASCE 7-02, American Society of Civil Engineers, Reston, VA, 2002.

Gonzales, J.R., "Storm had 1-2-3 punch, weather service believes," *Corpus Christi Caller-Times*, Corpus Christi, TX, October 25, 2002.